

## 0.a. Goal

Goal 3: Ensure healthy lives and promote well-being for all at all ages

## 0.b. Target

Target 3.c: Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States

## 0.c. Indicator

Indicator 3.c.1: Health worker density and distribution

## 0.d. Series

Health worker distribution, by sex and type of occupation (%)

Health worker density, by type of occupation (per 10,000 population)

## 0.e. Metadata update

2022-03-31

## 0.g. International organisations(s) responsible for global monitoring

Health Workforce Department, World Health Organization (WHO)

## 1.a. Organisation

World Health Organization (WHO)

## 2.a. Definition and concepts

### Health worker densities by occupation

#### **Definition:**

**Density of medical doctors:** The density of medical doctors is defined as the number of medical doctors, including generalists and specialist medical practitioners per 10,000 population in the given national and/or subnational area. The International Standard Classification of Occupations (ISCO) unit group codes included in this category are 221, 2211 and 2212 of ISCO-08.

**Density of nursing and midwifery personnel:** The density of nursing and midwifery personnel is defined as the number of nursing and midwifery personnel per 10,000 population in the given national and/or subnational area. The ISCO-08 codes included in this category are 2221, 2222, 3221 and 3222.

**Density of dentists:** The density of dentists is defined as the number of dentists per 10,000 population in the given national and/or subnational area. The ISCO-08 codes included in this category are 2261.

**Density of pharmacists:** The density of pharmacists is defined as the number of pharmacists per 10,000 population in the given national and/or subnational area. The ISCO-08 codes included in this category are 2262.

### **Health worker distribution by sex**

**Percentage of male medical doctors:** Male doctors as percentage of all medical doctors at national level. The ISCO-08 codes included in this category are 221, 2211 and 2212.

**Percentage of female medical doctors:** Female doctors as percentage of all medical doctors at national level. The ISCO-08 codes included in this category are 221, 2211 and 2212.

**Percentage of male nursing personnel:** Male nursing personnel as percentage of all nursing personnel at national level. The ISCO-08 codes included in this category are 2221 and 3221.

**Percentage of female nursing personnel:** Female nursing personnel as percentage of all nursing personnel at national level. The ISCO-08 codes included in this category are 2221 and 3221.

## **2.b. Unit of measure**

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Health worker densities by occupation: Per 10,000 population

Health worker distribution by sex and type of occupation: Percent (%)

## **2.c. Classifications**

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International Standard Classification of Occupations (ISCO-08)

## **3.a. Data sources**

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In response to the Sixty-ninth World Health Assembly (WHA69.19), an online National Health Workforce Accounts (NHWA) data platform was developed to facilitate national reporting. In addition to the reporting, the platform also serves as an analytical tool at the national/regional and global levels. Since its launch in November 2017, Member States are called to use the NHWA data platform to report health workforce data. Complementing the national reporting through the NHWA data platform, additional sources such as the National Census, Labour Force Surveys and key administrative national and regional sources are also employed. Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices.

## **3.b. Data collection method**

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Countries are encouraged to adopt a progressive NHA implementation approach building on multi-stakeholder engagement at national and sub-national levels. National focal points share the data with WHO through the online NHA data platform. The platform hosted in WHO, is built to facilitate data reporting on the indicators listed in the NHA Handbook and data sharing across all the 3 levels of WHO.

### 3.c. Data collection calendar

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Ongoing process

### 3.d. Data release calendar

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Data is released yearly.

### 3.e. Data providers

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NHA focal point at national level

### 3.f. Data compilers

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World Health Organization (WHO)

### 3.g. Institutional mandate

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The Global Strategy for Human Resources for Health: 2030 agenda and the progressive implementation of NHA adopted in Sixty-ninth World Health Assembly (WHA69.19),. WHA69.19 urges Member States to share health workforce data to WHO, to increase the evidence base on health workforce statistics globally.

## 4.a. Rationale

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For detailed metadata and definitions, refer to the National Health Workforce Accounts (NHA) Handbook (<https://www.who.int/publications/i/item/9789241513111>)

## 4.b. Comment and limitations

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Data on health workers tend to be more complete for the public health sector and may underestimate the active workforce in the private, military, nongovernmental organization and faith-based health sectors. In many cases, information maintained at the national regulatory bodies and professional councils is not updated.

As data is not always published annually for each country, the latest available data has been used. Due to the differences in data sources, considerable variability remains across countries in the coverage, periodicity, quality and completeness of the original data. Densities are calculated using national

population estimates from the United Nations Population Division's World Population Prospects database and may vary from densities produced by the country.

## 4.c. Method of computation

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### **Health worker densities by occupation**

The figures for number of medical doctors (including generalist and specialist medical practitioners) depending on the nature of the original data source may include practising medical doctors only or all registered medical doctors.

The figures for number of nursing and midwifery include nursing personnel and midwifery personnel, whenever available. In many countries, nurses trained with midwifery skills are counted and reported as nurses. This makes the distinction between nursing personnel and midwifery personnel difficult to draw.

The figures for number of dentists include dentists in the given national and/or subnational area. Depending on the nature of the original data source may include practising (active) only or all registered in the health occupation. The ISCO -08 codes included here are 2261.

The figures for number of pharmacists include in the given national and/or subnational area. Depending on the nature of the original data source may include practising (active) only or all registered in the health occupation. The ISCO-08 codes that relate to this occupation is 2262.

In general, the denominator data for workforce density (i.e. national population estimates) are obtained from the United Nations Population Division's World Population Prospects database. In cases where the official health workforce report provides density indicators instead of counts, estimates of the stock were then calculated using the population estimated from the United Nations Population Division's World population prospects database (2017).

### **Health worker distribution by sex and type of occupation**

The number of male medical doctors as reported by the country is expressed as a percentage of total male and female medical doctors reported by the country.

The number of female medical doctors as reported by the country is expressed as a percentage of total male and female medical doctors reported by the country.

The number of male nursing personnel as reported by the country is expressed as a percentage of total male and female nursing personnel reported by the country.

The number of female nursing personnel as reported by the country is expressed as a percentage of total male and female nursing personnel reported by the country.

## 4.d. Validation

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The data recorded in the NHA data platform is validated by country focal points. Data quality checks and country consultation are employed.

## 4.e. Adjustments

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Not applicable

## 4.f. Treatment of missing values (i) at country level and (ii) at regional level

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- **At country level**

Data for the countries with missing values, if any in the last 5 years are estimated with neighbouring comparable countries.

- **At regional and global levels**

Not applicable

## 4.g. Regional aggregations

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The global average density was estimated as the population weighted average of the national densities.

For the regional average density, data for the countries with missing values, if any in the last 5 years were first estimated with neighbouring comparable countries. Then the regional average was also computed as a weighted average by pooling these estimated values plus the available national densities.

The population for estimating densities at regional and global level are based on the latest available estimates from the UN Population Division.

## 4.h. Methods and guidance available to countries for the compilation of the data at the national level

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Countries are requested to refer to the National Health Workforce Accounts (NHWA) Handbook (<https://www.who.int/publications/i/item/9789241513111>), for guidance on indicators and methodology.

## 4.i. Quality management

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All national health occupations data is mapped to the International Standard Classification of Occupations (ISCO-08) to enable cross country comparability.

## 4.j. Quality assurance

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Data is collected through a standardised online data entry form based on DHIS2 application. Data validations and quality checks are in-built to minimise data entry errors

## 4.k. Quality assessment

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We perform internal validation for outliers and completeness and raise queries to countries directly to the national focal points and /or through the WHO country and regional offices, for clarification.

## 5. Data availability and disaggregation

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### Data availability:

Data available for all 194 WHO Member States

### Time series:

From year 2000.

Global Health Workforce Statistics in Global Health Observatory data repository:

<https://apps.who.int/gho/data/node.main.HWFGGRP?lang=en>

NHWA data portal: <https://apps.who.int/nhwaportal/>

### Disaggregation:

National level data

## 6. Comparability/deviation from international standards

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### Sources of discrepancies:

Population estimates utilised by countries and/or regional offices may differ from those of the UN Population Division

## 7. References and Documentation

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### URL:

<https://www.who.int/activities/improving-health-workforce-data-and-evidence>

### References:

- Sixty-ninth World Health Assembly Agenda Item 16.1. Global strategy on human resources for health: workforce 2030 (2016), available from ([http://apps.who.int/gb/ebwha/pdf\\_files/WHA69/A69\\_R19-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_R19-en.pdf))
- WHO (2014). Global strategy on human resources for health: Workforce 2030 (<https://www.who.int/publications/i/item/9789241511131>)
- "WHO Global Health Workforce Statistics." World Health Organization, n.d. Web. Feb. 2018. (<https://apps.who.int/gho/data/node.main.HWFGGRP?lang=en>)
- "WHO Global Health Workforce Statistics." World Health Organization, n.d. Web. Feb. 2018. (<http://apps.who.int/gho/data/node.main.A1444?lang=en&showonly=HWF>)
- WHO, National Health Workforce Accounts: A Handbook, n.d. Web. Feb. 2018. (<https://www.who.int/publications/i/item/9789241513111>)
- WHO 13<sup>th</sup> Global Programme of Work (<https://www.who.int/about/what-we-do/gpw-thirteen-consultation/en/>)
- WHO NHWA data portal: <https://apps.who.int/nhwaportal/>